

The Workings of the Modern Pen



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The pen, seen in any setting, like school, home, the office, and much more is seemingly everywhere in life. The creation of the pen first appeared in ancient Egypt where many ancient scribes wrote any information necessary, which would then be shared across the world. This information revolution had its roots in Egypt, but had influence wherever it was introduced throughout early civilization. Since information could be shared with anyone from any class, every society changed as now education became more available to those who previously didn't have access to it and added more information to those who already were educated as now they learned of new ideas, birthing new innovations and change. The modern clicker pen is arguably the most iconic and important invention of modern life due to one simple use, writing down any information.

Throughout all of the time, the idea of what the functions and appearance of the pen changed. The roots started as a reed which then changed into a feather quill, to a steel quiver, to the fountain pen, and then the modern incarnation as the ballpoint pen. The modern ballpoint pen was invented by a man named Laslo Biro, in 1938 which was right before the start of World War II. He along with his brother, Georg, made the first commercially available pen where it became popular immediately. It was originally made to solve a problem where the inventor was upset at the current workings of fountain pens, where they easily smudged too frequently and took too much time to fully dry on paper. The popularity of the pen made it popular in the Royal Airforce since it was much sturdier and usable at any altitude, unlike the fountain pen which would burst. This popularity in the military contributed to why it is popular today (Journal Shop, 2018). The pen soon changed with many different versions being made, with the version being analyzed here is the Clicker pen.

The Clicker Pen can be broken down into two types of parts, the main parts, and the subparts of a pen. The interior of the pen, which is the main parts of the pen, is made up of 7 parts which are the spring, thrust device, thrust tube, reservoir, ball, socket, and ink. The Exterior, which are the subparts, are made up of 4 parts, the tip, the rubber grip, barrel, and grip. These two combine to make a seemingly simple but complex tool that can also be aesthetically pleasing to look at when writing and holding. All of these parts can be seen in figure 1 where it shows what we see and what we don't see in these everyday tools.

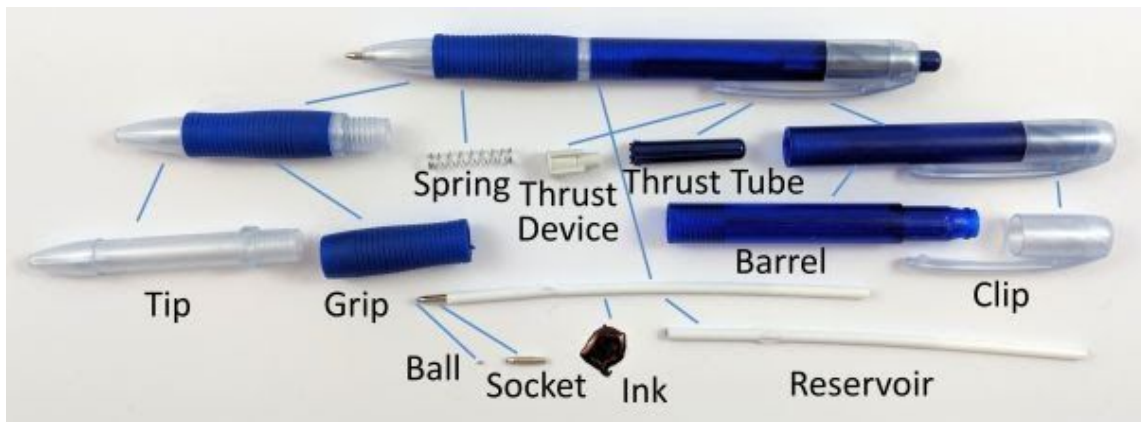


Figure 1

The interior of the pen will be first discussed as that is the main component used when writing down any information you may need at that time. As mentioned before, the interior of the pen is made up of 7 parts which combine in a certain way to show the ball and socket when clicked. The thrust tube and thrust device is where the process starts where when you click down on it, the parts rotate to distance themselves using the edges on both. Both thrust devices have edges on them that resemble teeth but the thrust device has two types of edges as seen in figure 2.

These two different teeth have similar shape but differ in length which determines what effect the thrust tube has on the thrust device.

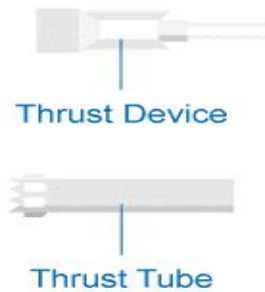


Figure 2

The thrust tube connects with the thrust device which is in contact with the reservoir, which holds the ink of the pen. The thrust device pushes the reservoir down when the tube is pushed down and this is because the device rotates, changing which teeth the tube is in contact with. Since the reservoir is pushed out, the ball and socket which is inside the reservoir is pushed out which serves as a funnel with a plunger inside of it. Also, the reservoir has two notches that pop out to hold the spring in place at the bottom of the pen. When the pen is used to write, the ball, or the plunger, is lifted out of the opening of the socket, letting the ink flow out. When done writing, the thrust tube is pushed again, causing the thrust device to rotate again and rising up due to the spring lifting the reservoir, which is connected to the device, up and into the pen. All these motions combine to make the classic clicking sound of a pen as when the thrust device rotates, it does it with enough force to make a sound clicking.

All of these motions and interactions between the interior parts are hidden away due to the exterior parts which protect and hold in place this process. The main protector is the barrel of the pen which is the biggest part of the entire pen and it connects with the tip of the pen. The barrel serves as protection and the tip serves as the holder of the place which helps guide where

the reservoir is supposed to exist from. The tip is usually, but not always, fitted with a grip made of rubber which is supposed to help you have a better grip of the pen, leading to fewer mistakes. The barrel is connected to one more exterior part of the pen which is the clip. The clip is connected to the top of the barrel and is a hook that is meant to hang off any surface or material thin enough to let it like shirts or pockets. It also serves as a guide of sorts for the thrust tube where the clip has a hole for the tube to exit from and help keep its position. Since these parts are interchangeable, it makes sense that they are subparts and less important than the interior parts as they can be changed to suit the aesthetic you want. However, this does not mean they can be taken out entirely and must be present to help make the process of writing better. This leads to a product you use every day in many parts of your life to look like whatever you want.

Overall, the history and importance of pens is one that is complex but works so simple in use for people. It changed what it means to communicate and helped rapidly innovate changes and brought forth a new age of communication. The effectiveness of a pen improved over time, leading to better and more accessible pens to any and everyone making a staple of life. Although the rise of the digital seems to make the pen an aspect of the past, the influence it had to make it get that way seems like it will survive the gauntlet of time and persist in everyday life.

Citations:

The History of Pens: The Journal Shop. (2018, June 20). Retrieved March 31, 2020, from <https://www.thejournalshop.com/thejournal/history-of-pens/>

How Cheap Can You Make it? (2020, January 13). Retrieved March 31, 2020, from <https://www.allaboutlean.com/how-cheap-can-you-make-it/>

Ledger, K. (2019, April 4). The Anatomy of Pens and Pencils. Retrieved March 31, 2020, from <https://www.qualitylogoproducts.com/promo-university/anatomy-of-pens-pencils.htm>